

AMENDMENTS TO THE CLAIMS

Upon entry of this amendment, the following listing of claims will replace all prior versions and listings of claims in the pending application.

IN THE CLAIMS

1. (Original) A method comprising:
 - using a computer having a graphical user interface;
 - defining at least one function within a graphical representation of a finite state machine;
 - representing the at least one function graphically;
 - calling the graphical function in a modeling system.
2. (Original) The method of claim 1 wherein the defining step comprises using a function block.
3. (Original) The method of claim 2 wherein the defining step further comprises using a function prototype.
4. (Original) The method of claim 1 wherein the defining step further comprises using a function flow diagram.
5. (Original) The method of claim 4 wherein the representation of the function comprises a diagram comprising graphical elements.
6. (Original) The method of claim 1 wherein the simulation system comprises means for graphical diagramming.

7. (Original) A system comprising:

a computer comprising a graphical user interface, memory, storage, and at least one input device;

a computer program residing on computer readable media having instructions to cause the computer to:

receive user input defining at least one graphical function;

receive user input to use the at least one graphical function in a simulation.

8. (Original) The system of claim 7 wherein the user input defining the at least one graphical function is entered into a function block.

9. (Original) The system of claim 8 wherein the user input defining the at least one graphical function includes a function prototype.

10. (Original) The system of claim 7 wherein the user input comprises a function flow diagram.

11. (Original) The system of claim 10 wherein the flow diagram is comprised of graphical elements.

12. (Original) A computer program product, stored in a computer readable medium, comprising instructions to cause a computer to:

receive user input defining at least one graphical function;

receive user input to use the at least one graphical function in a simulation.

13. (Original) The computer program product of claim 12 wherein the user input defining the at least one graphical function is entered into a function block.

14. (Original) The computer program product of claim 12 wherein the user input defining the at least one graphical function includes a function prototype.

15. (Original) The computer program product of claim 12 wherein the user input comprises a function flow diagram.
16. (Original) The computer program product of claim 12 wherein the function flow diagram is comprised of graphical elements.
17. (Original) A system for modeling finite state machines comprising:
 - a computer comprising a graphical user interface, memory, storage, and at least one input device;
 - means to receive user input to define at least one graphical function;
 - means to represent the function in a state flow diagram;
 - means to use the graphical function in a simulation of at least one finite state machine.
18. (Original) The system of claim 17 wherein the user input defining the at least one graphical function is entered into a function block.
19. (Original) The system of claim 17 wherein the system further comprises means for simulating at least one finite state machine.
20. (Original) The system of claim 17 wherein the user input defining the at least one graphical function includes a function prototype.
21. (Original) The system of claim 17 wherein the user input comprises a function flow diagram.
22. (Original) The system of claim 10 wherein the flow diagram is comprised of graphical elements.

23. (Original) The method of claim 5 further comprising the ability to hide the display of the flow diagram based upon user input.

24. (Original) A method of operating a data processing system having a graphical user interface comprising:

 using the graphical user interface to create a graphical representation of a finite state

 machine including a graphical representation of a function;
 emulating the represented finite state machine.

25. (Original) The method of claim 24 wherein the graphical representation of the function comprises a function prototype.

26. (Previously Presented) The method of claim 24 wherein the function prototype defines a textual format for invoking the function.

27. (Previously Presented) The method of claim 26 wherein the graphical representation of the finite state machine includes at least one invocation of the function using the defined textual format.

28. (Previously Presented) The method of claim 24 further comprising shadowing a function, wherein shadowing comprises using in a function invocation a function definition closest to a point of invocation of the function in a state diagram hierarchy.

29. (Previously Presented) The method of claim 24 wherein the function is exportable by a state chart and may be invoked anywhere in the finite state machine in which the chart appears, including other charts that define the finite state machine.

30. (Previously Presented) The method of claim 24 wherein the emulation comprises computer code generation.

31. (Previously Presented) The method of claim 24, wherein the graphical representation of the function comprises a function prototype defining a textual format for invoking the function; and wherein the graphical representation of the finite state machine includes an invocation of the function using the defined textual format.

32. (Previously Presented) A computer readable medium having encoded thereon instructions for causing a computer system to receive through a graphical user interface a graphical representation of a finite state machine including a graphical representation of a function; and emulate the represented finite state machine.

33. (Previously Presented) The computer readable medium of claim 32, wherein the graphical representation of the function comprises a function prototype defining a textual format for invoking the function; and wherein the graphical representation of the finite state machine includes an invocation of the function using the defined textual format.

Please enter the following new claims:

34. (New) In an electronic device, a method of graphically representing an event-driven system, comprising:

- providing one or more block components representing a selected state;
- providing one or more transition components representing transitions between the one or more block components representing a selected state; and
- providing a block component representing a function and coupled with at least one of the one or more block components representing a selected state.

35. (New) The method of claim 34, wherein the function accepts at least one argument and returns at least one result.

36. (New) The method of claim 34, wherein at least a subset of the one or more block components representing a selected state and the one or more transition components can invoke the function.
37. (New) The method of claim 34, further comprising specifying data properties of the function.
38. (New) The method of claim 34, further comprising associating a data item with the function.
39. (New) The method of claim 34, wherein the function comprises a graphical function.
40. (New) The method of claim 34, wherein the function has a plurality of configurable properties.
41. (New) The method of claim 34, wherein the function defines a textual format for invoking the function.
42. (New) The method of claim 34, further comprising providing a shadowing function, wherein shadowing comprises using in a function invocation a function definition proximally closest to a point of invocation of the function in a state diagram hierarchy.
43. (New) In a graphical representation environment, a system for graphically representing an event-driven system, comprising:
- one or more block components representing a selected state;
 - one or more transition components representing transitions between the one or more block components representing a selected state; and
 - a block component representing a function and coupled with at least one of the one or more block components representing a selected state.

44. (New) The system of claim 43, wherein the function accepts at least one argument and returns at least one result.

45. (New) The system of claim 43, wherein at least a subset of the one or more block components representing a selected state and the one or more transition components can invoke the function.

46. (New) The system of claim 43, further comprising specifying data properties of the function.

47. (New) The system of claim 43, further comprising associating a data item with the function.

48. (New) The system of claim 43, wherein the function comprises a graphical function.

49. (New) The system of claim 43, wherein the function has a plurality of configurable properties.

50. (New) The system of claim 43, wherein the function defines a textual format for invoking the function.

51. (New) The system of claim 43, further comprising providing a shadowing function, wherein shadowing comprises using in a function invocation a function definition proximally closest to a point of invocation of the function in a state diagram hierarchy.

52. (New) A medium for use in a graphical representation environment on an electronic device, the medium holding instructions executable using the electronic device for performing a method of graphically representing an event-driven system, comprising the steps of:

providing one or more block components representing a selected state;

providing one or more transition components representing transitions between the one or more block components representing a selected state; and

providing a block component representing a function and coupled with at least one of the one or more block components representing a selected state.

53. (New) The medium of claim 52, wherein the function accepts at least one argument and returns at least one result.

54. (New) The medium of claim 52, wherein at least a subset of the one or more block components representing a selected state and the one or more transition components can invoke the function.

55. (New) The medium of claim 52, further comprising specifying data properties of the function.

56. (New) The medium of claim 52, further comprising associating a data item with the function.

57. (New) The medium of claim 52, wherein the function comprises a graphical function.

58. (New) The medium of claim 52, wherein the function has a plurality of configurable properties.

59. (New) The medium of claim 52, wherein the function defines a textual format for invoking the function.

60. (New) The medium of claim 52, further comprising providing a shadowing function, wherein shadowing comprises using in a function invocation a function definition proximally closest to a point of invocation of the function in a state diagram hierarchy.